Beyond EIA-859:
The Next Five Years for Data Management

Institutionalizing the New DM

NDIA Technical Information Division

Configuration Data Management Symposium

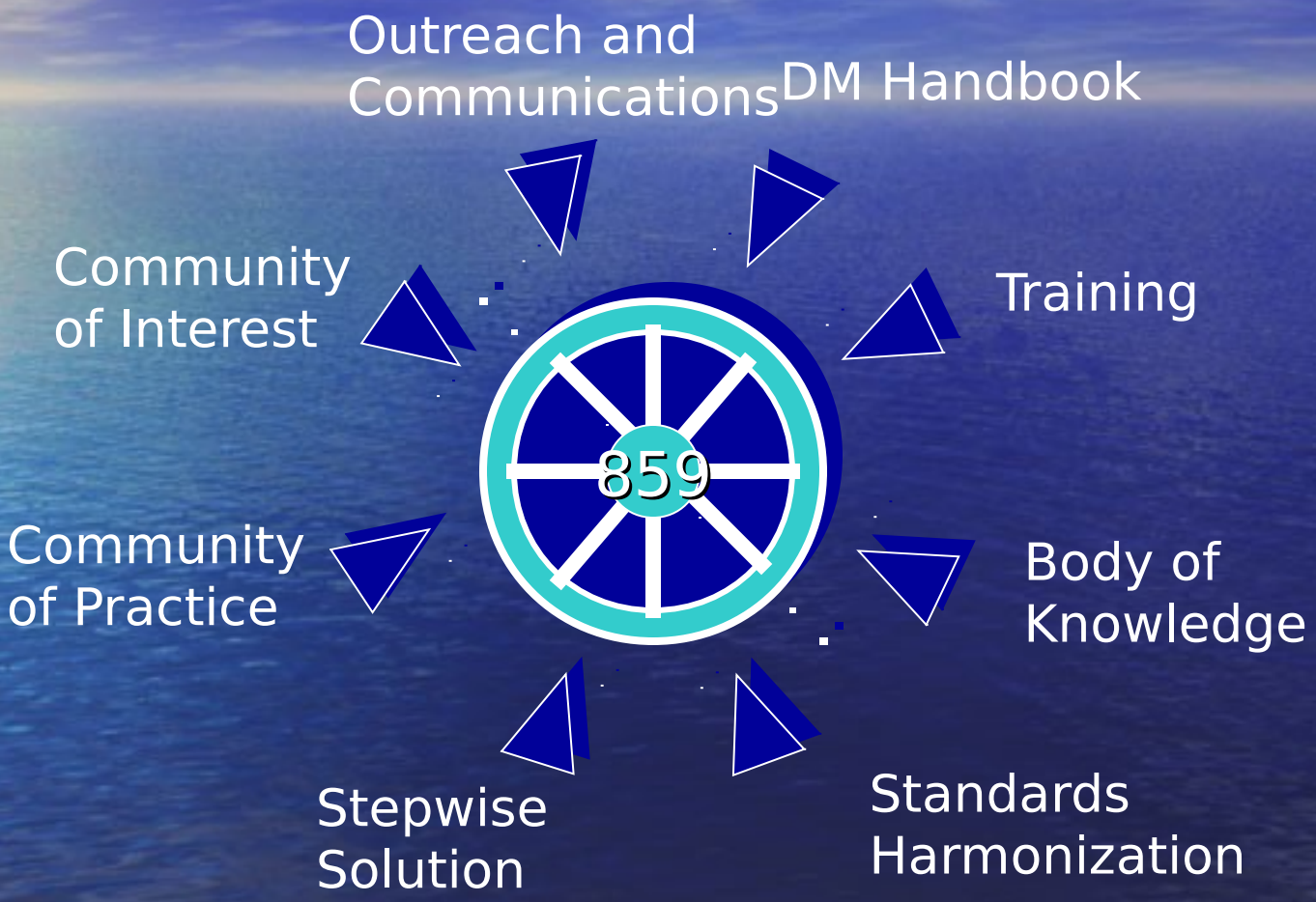
Data Management Panel

New Orleans, LA - August 2003

What’s it going to take?

- Solid Foundation
- Essential Elements
- Complete Solution
- Phasing, Transition
- Maturity Measures of Effectiveness
- Maturity Assessment

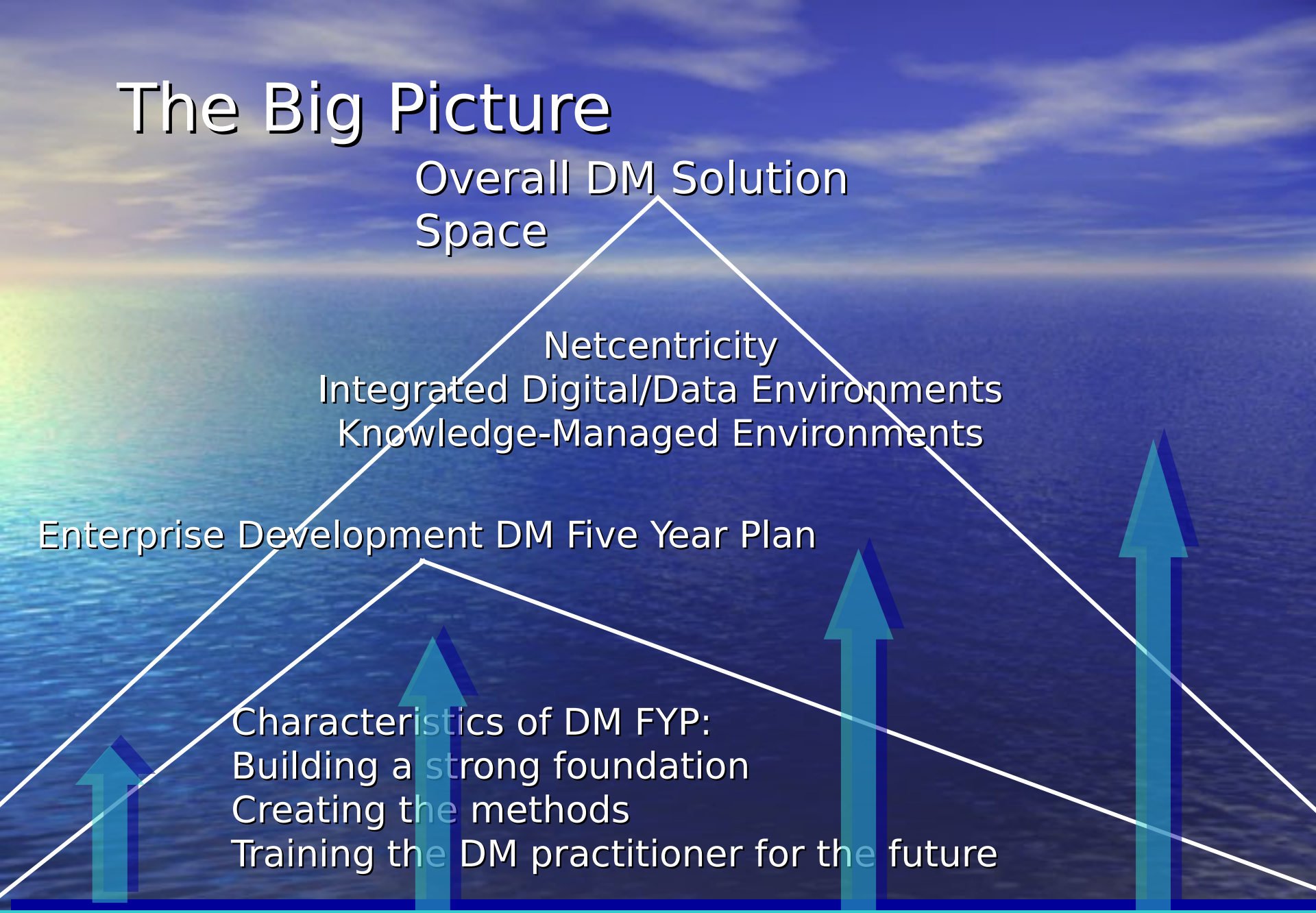
Elements of the Solution



Solid Foundation

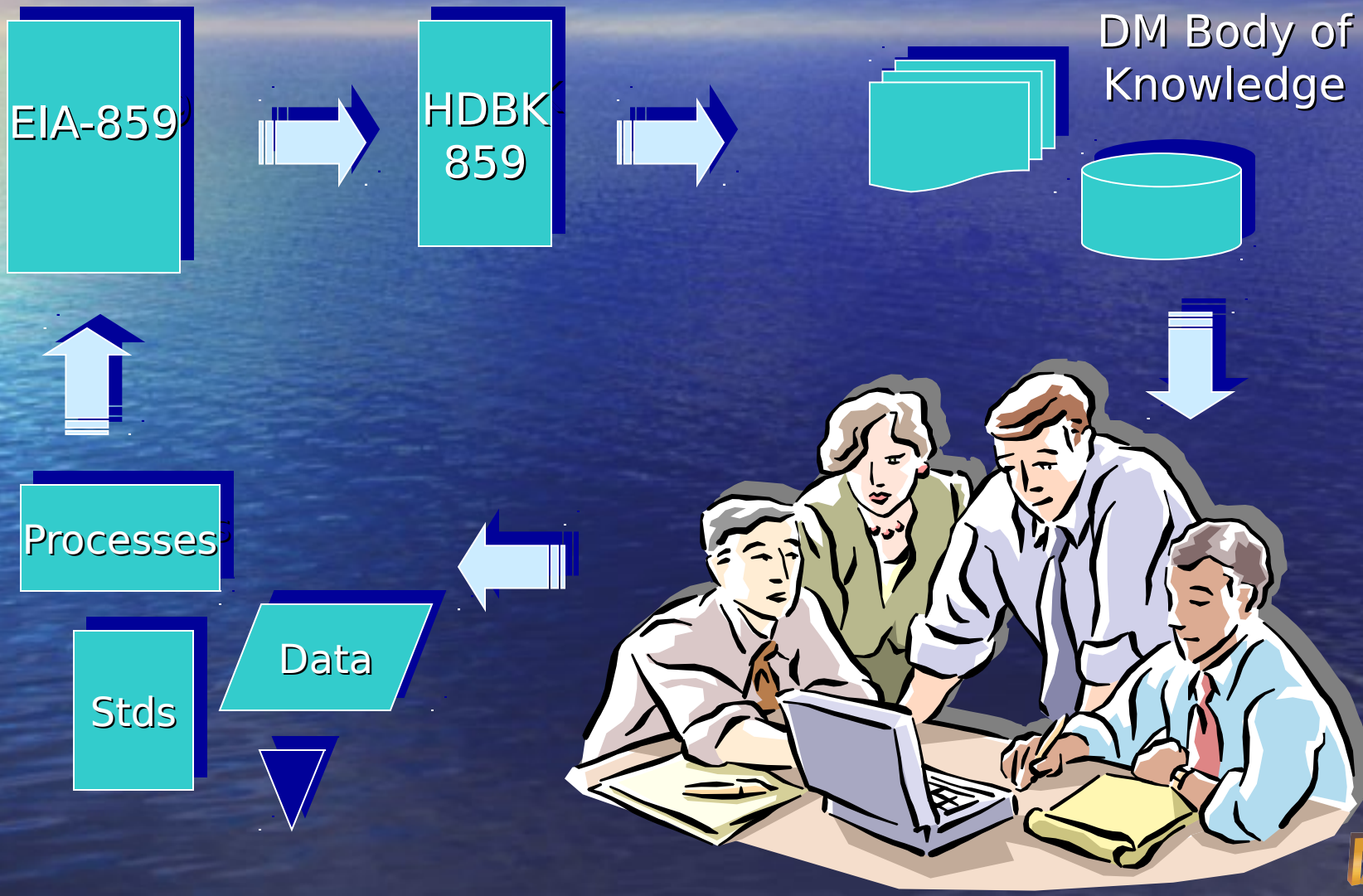
- New Expertise
- Evolved Range and Roles
- New Methods
- Practitioner Consistency
- Business Relevancy
- Training
- Organizational Recognition

The Big Picture



859 *859 Handbook* *Training* *DMBoK*

Stepwise Solution



Essential Elements

- EIA-Standard-859
  - Includes training, outreach, institutionalization
- DM Handbook
- DMBoK
- DM COI/COP
- Standards Harmonization

EIA-859

- Linchpin of the overall strategy
- Provides principle-based view of DM
- Takes the principles down to the “how-to” level with templates, process flows, key practices
- Sets the stage for the DM Handbook

859 Status

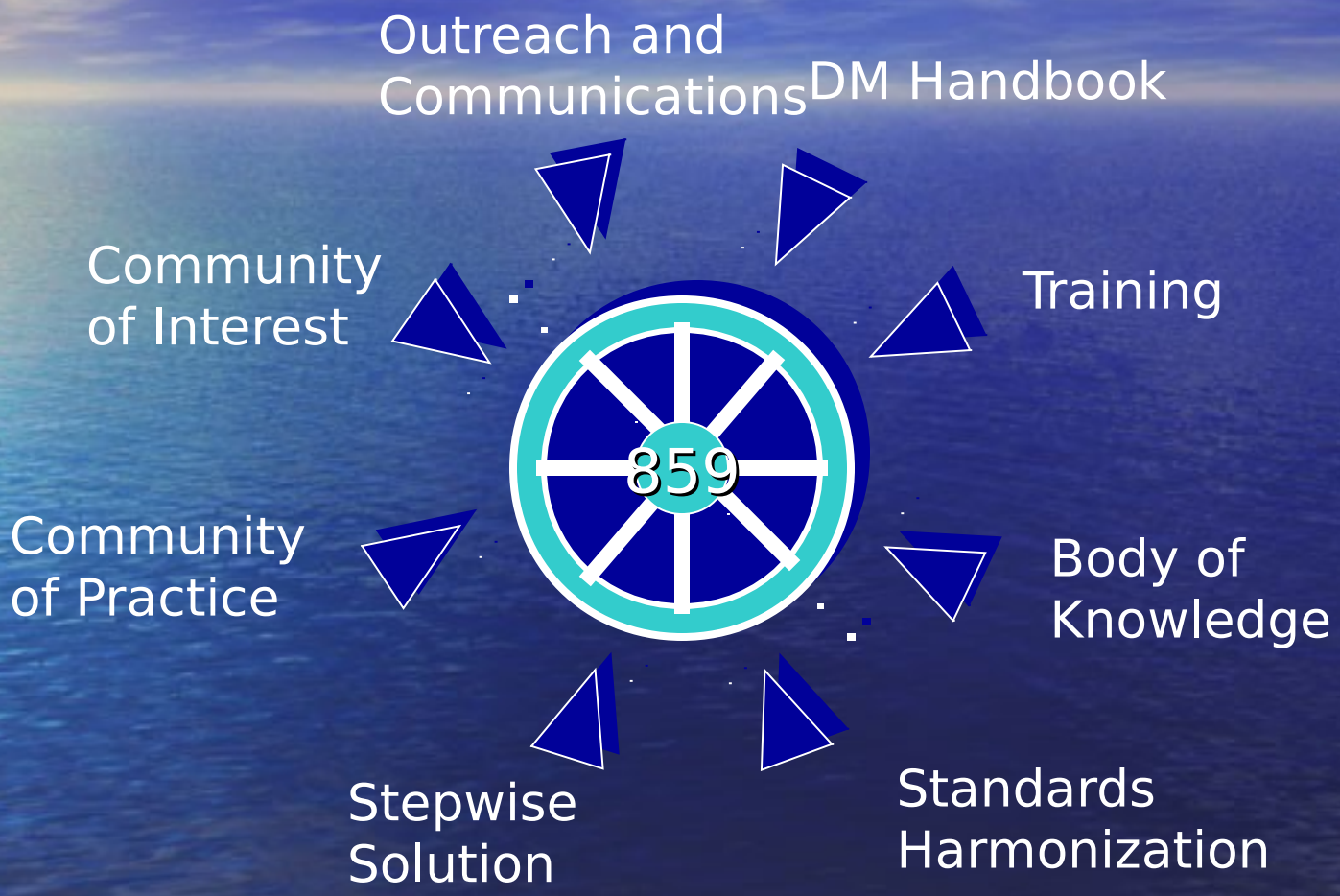
- Final Review
- Preparation of standard materials for submittal
  - Review, Edit, Balloting
- Principles, Enablers, Appendices are Complete

Training and Outreach is Scheduled and Underway

What's Next for 859?

- Review and comment phase
- Incorporation, adjudication, consideration of comments
- ANSI status
  - Application will be made by GEIA following successful balloting

Complete Solution



Data Management Five Year Outlook

EIA 859

EIA 859 outreach and communications

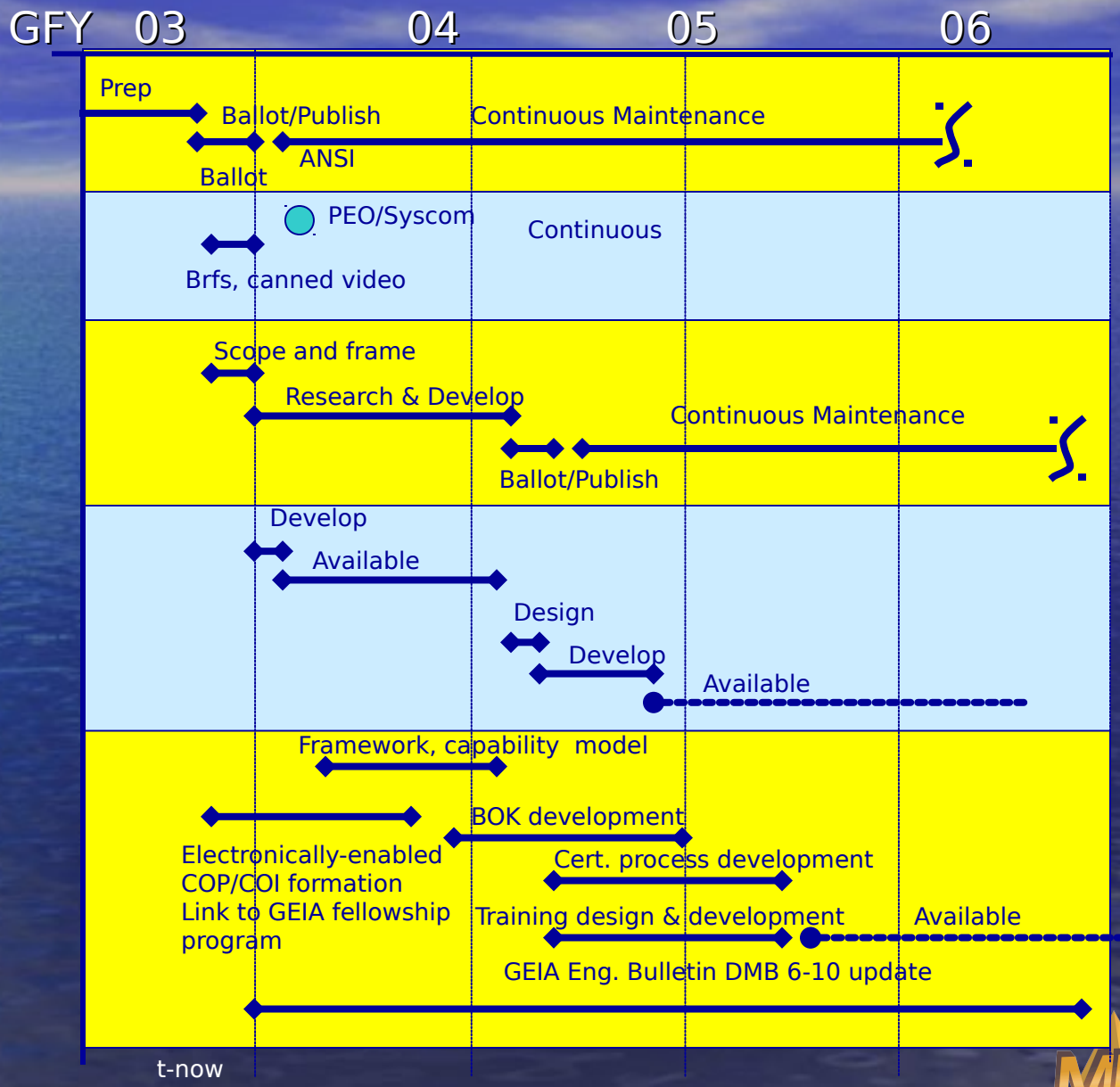
DM Handbook

Training and Certification

- 859 standard (familiarization)
- 859 handbook (distance learning)

DM-Body of Knowledge (DM-BOK)

Standards harmonization



DM Handbook

- Applies the principles through development of appropriate and timely methods
- Captures implementation strategies and lessons learned
- Provides a reference for living, ongoing knowledge capture
- DM Handbook Initiation
  - Seattle GEIA Conference = Kickoff
- Handbook Development
  - Methods
  - Consistency
  - Repeatability

Training

- 859 Standard (Familiarization)
  - Deeper institutionalization
  - Acceptance and professionalization of the practice
  - Builds momentum for the practitioner
  - Creates resonance in the organization
- 859 Handbook (Distance Learning)
  - Provides accepted, successful methods
  - Works across industry and government to create one voice
  - Demonstrates proven approaches
  - Overcomes barriers to education and training

Establishes the Rationale for a DM Body of Knowledge (BoK)

Community of Interest/Practice

- CM and DM probably have the oldest and most well established, existing communities of practice
- Efforts on this project should focus on enabling the existing DM community to the digital environment
  - Consistency, repeatability
  - Communication, boundaries

About Communities of Practice

- Natural part of organizational life and practice
  - Sometimes formalized, sometimes not
  - Flourish whether or not the organization recognizes them
- Effectiveness and health depends on voluntary engagement of the membership, leadership that emerges from within
- Ability to steward knowledge as a living process depends on certain measures of autonomy and informality
- The “cultivation” analogy
  - Plants are cultivated or else they grow unmanaged
  - Healthy plants are encouraged, nurtured
  - Both approaches work – but the results are very different
  - Each results in the growth of a COP
- The objective is to create context for a COP

Stages of Community Development

Creating Context for a COP

- Integrating like communities
- Giving them a voice in decisions
- Providing the membership with legitimacy
  - Ability to influence operating units
  - Developing internal processes to managing the value that is created through, in, and as a result of the Community of Practice

Impact of not creating context = unfulfilled potential for the COP/membership

Context Challenges

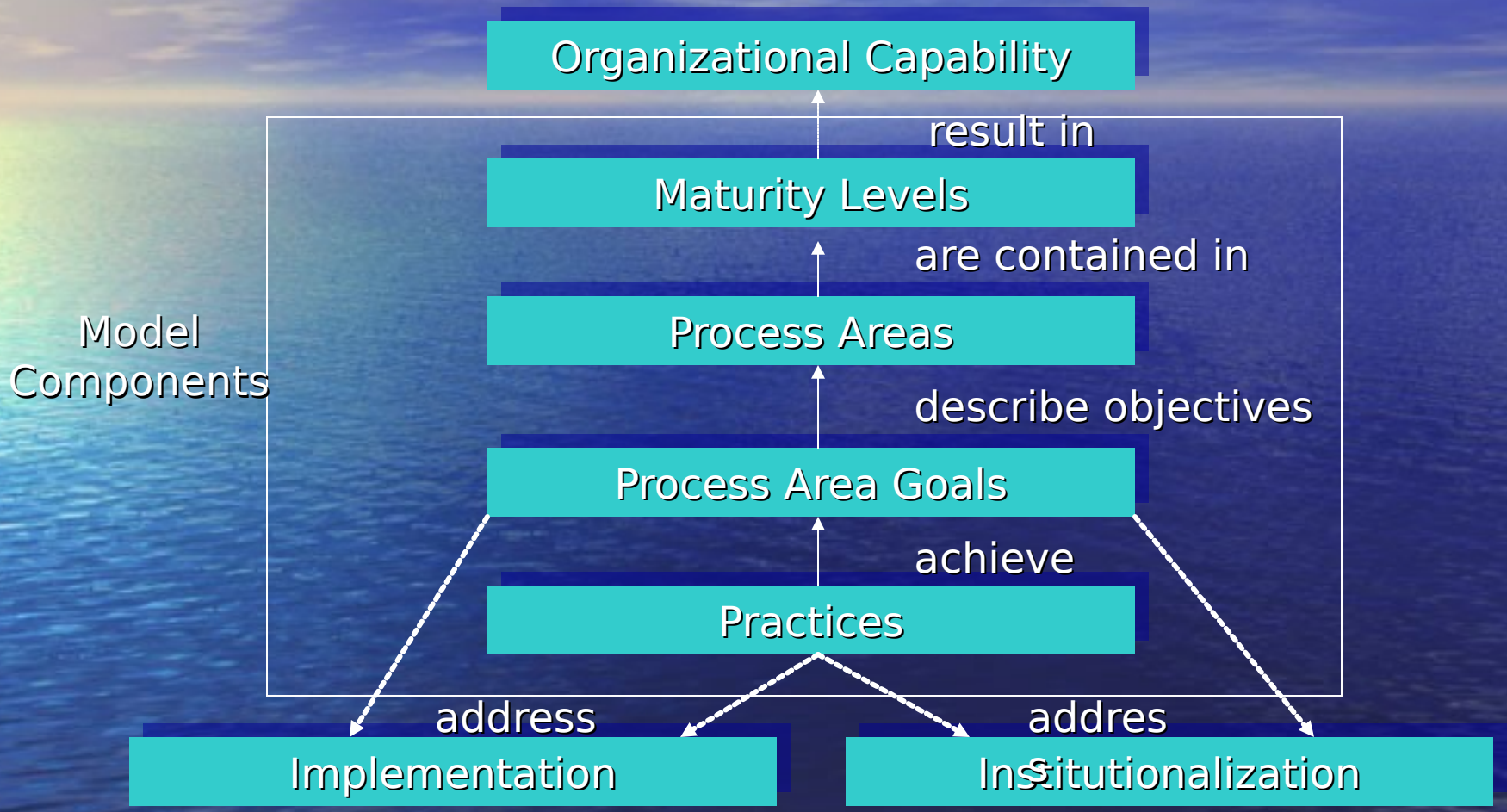
- Critical for overcoming geographical and organizational bounds
- Needed for channeling resources effectively
- Intentional cultivation avoids pitfalls
  - "Spare time" only participation
  - Organized impact and full alignment on the topic
  - Influence-building on contingent and related organizations
- Context creates stronger COPs and better outcomes

Growth and Influence of Data Management is Facilitated

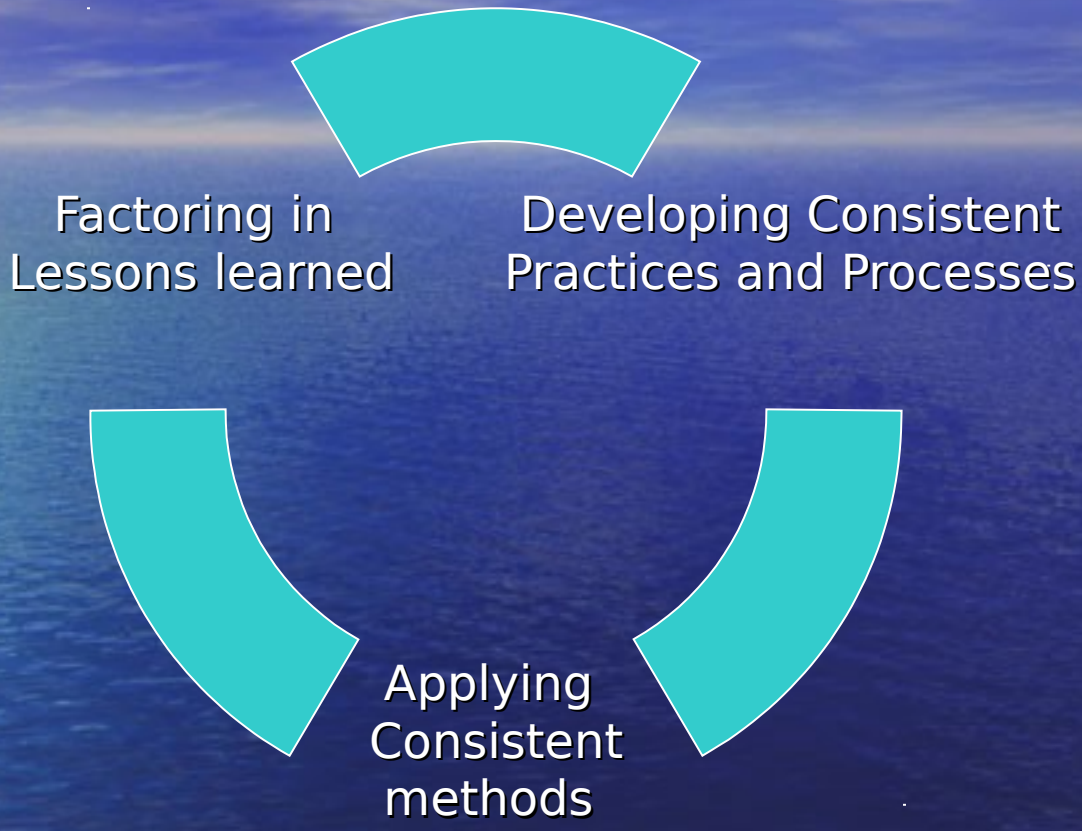
DM “People Capability Maturity Model”

- CMM = evolutionary roadmap for implementing vital practices across internal and external domains
- Contains essential elements of effective processes
- Professionalizes the field of DM
- Provides consistency, repeatability, and guidance on expected proficiencies for DM

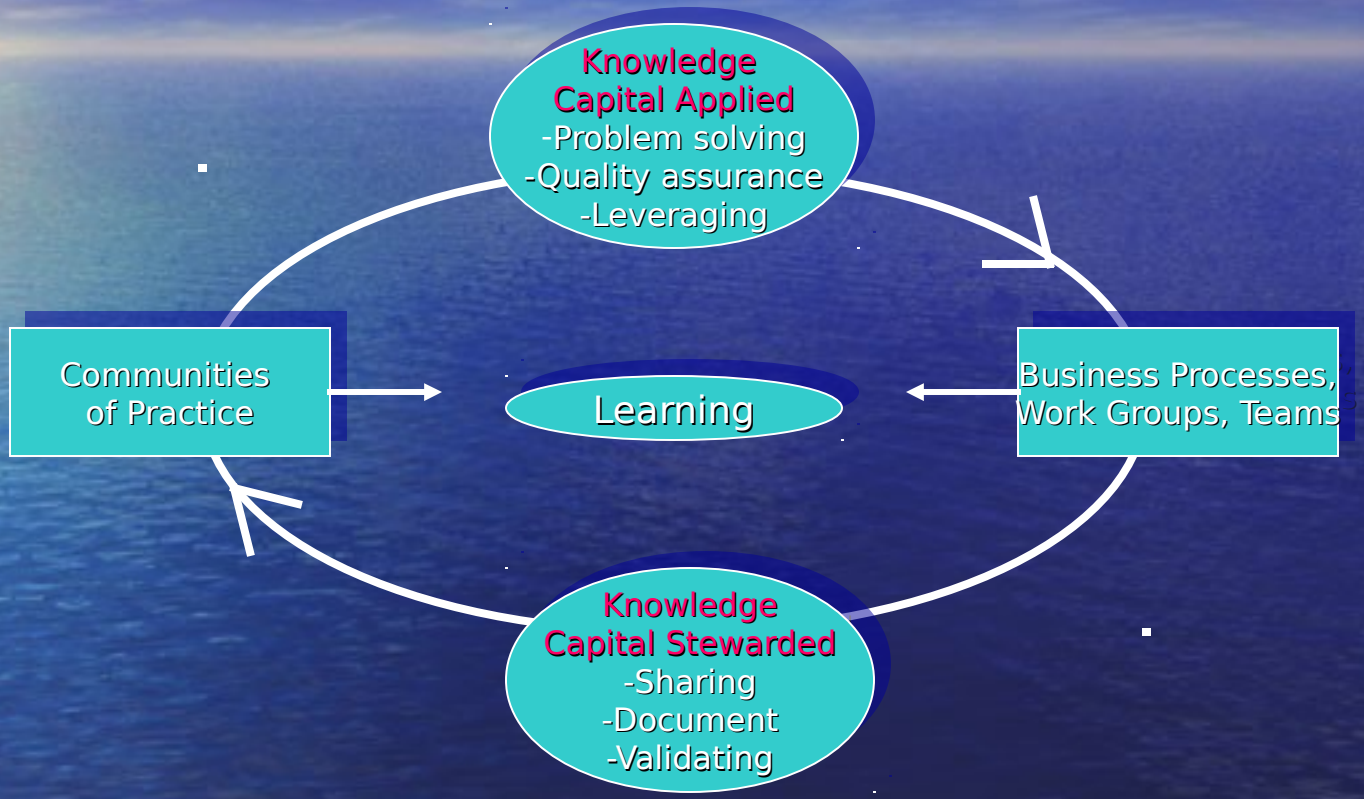
“People” Capability Maturity Models: The Structure of the People CMM



The Discovery and Improvement Process



The Multi-Membership Learning Cycle DM Has a Role in the Process, Too



Value Outcomes

- Connecting local pockets of expertise and isolated professionals
- Diagnosing and addressing recurring business challenges whose root causes cross team/organizational boundaries
- Analyzing knowledge-related uneven performance across units performing similar tasks/work to bring everyone up to the highest standard
- Linking and coordinating unconnected activities and initiatives that are addressing a similar knowledge domain

Creating Multiple Types of Value

- Short-term and long-term value
- Tangible and intangible value
- Strategy-implementing and strategy-making value

Value to Organizations

	Short-Term Value	Long-Term Value
	Improve Business Outcomes	Develop Organizational Capabilities
	Arena for problem solving	Ability to execute a strategic plan
Benefits to the Organization	Quick answers to questions	Authority with clients
	Reduced time and costs	Increased retention of talent
	Improved quality of decisions	Capacity for knowledge-development projects
	More perspectives on problems	Forum for “benchmarking” against rest of industry
	Coordination, standardization, and synergies across units	Knowledge-based alliances
	Resources for implementing strategies	Emergence of unplanned capabilities
	Strengthened quality assurance	Capacity to develop new strategic options
	Ability to take risks with the backing of the community	Ability to foresee technological developments
		Ability to take advantage of emerging market opportunities

Value to Community Members

	Short-Term Value	Long-Term Value
	Improve Experience of Work	Foster Professional Development
	Help with challenges	Forum for expanding skills and expertise
Benefits to the Community	Access to expertise	Network for keeping abreast of a field
	Better able to contribute to team	Enhanced professional reputation
	Confidence in one's approach to problems	Increased marketability and employability
	Fun of being with colleagues	Strong sense of professional identity
	More meaningful participation	
	Resources for implementing strategies	

Phasing, Transition

- Lexicons
- Processes
- Clear learning objectives
- Milestones
- Trust-based relationships
- Reaching across boundaries
- Consistent practices

DM-Body of Knowledge

- Assembles excellence in one area
- Drives the development, capture, and use of Best Practices in DM
- Acts as a repository of knowledge, experience, and expertise
- Continues the formalization of DM across all areas where DM is key
  - Boundaries are removed
  - Linkages are created
  - Communities emerge, merge, find resonanc

EIA-859 Outreach and Communications

- Institutionalizes 859
- Provides support for principle-based DM
- Presents opportunities for learning at minimal cost, on individual time availability
- Gets the word out to the practitioner community
- Raises the profile of new DM
- Demonstrates ROI to manageme

Standards Harmonization

- Closely related GEIA standards (EIA 632, ANSI/EIA 649, EIA 836, EIA 927) and supporting bulletins
- Other important standards
  - Collaboration infrastructure services (e.g., enterprise workflow, document management)
  - Integration services (e.g., application and data integration)
  - Portal services (e.g., access and security,

Some of these now exist, some will emerge over time

Maturity Measures of Effectiveness

- End-states
- Expectations
- Outcomes
- Objectives
- Organizational Expectations
- Metrics

Maturity Assessment Methods

- Yardstick for measurement
  - Benchmark
- Pathway for continuous improvement
  - Objective/End-state
- Metrics
  - Positive
  - Negative
  - Organizational priorities

Establishing Value
Step One: Metrics

Key: Establishing & calculating worth for effort and assets expended, saved, re-used

- *Cost* - acquisition and life cycle *(investment potential)*
- *Price* - against risk and investment *(return)*
- *Re-use* - with metadata and characterization *(leverage factor)*
- *Measurable consistency* - from project to project *(data integrity)*
- *Evolving* - quality decision data *(KM or collaborative quality, use, and outcome)*

Establishing Value
Step Two: Maturity Model

The three essential macro states of maturity

Initial	*Transitional*	*Excellence*
Manual, inconsistent methods that are not repeatable (Asset Ignorance)	**Course corrections that are applied in certain cases, over time** **Methods improve and gain consistency with understanding & use (Asset Recognition)**	**Improvements are predictable, proven, and intentionally created** **Repeatable methods create opportunities for efficiencies & economies of scale (Asset Use)**

TIME, TECHNOLOGY, UNDERSTANDING & QUALITY

How does a company know whether its data is being managed effecti

Maturity Levels 1-5	Process Performance	Technology Support	Quality, Predictability of Results
5 – Fully Optimized Data support success rate is 100%	Processes are almost entirely automated	Data mining, expert systems, knowledge management are enabled and employed routinely	Almost complete certainly of results is achieved
4 – Predictable Risk Ability to routinely reduce uncertainty and data-related risk	Statistically stable processes routinely measured against industry standard performance metrics	Automation and background performance of processes, risks; automated decision support services	Reliability and predictability of results is significantly improved; e.g. six sigma vs three sigma
3 – Corporate Competency Capabilities are institutionalized within organization, enabled by mature technology	Standard, consistent, statistically capable measurable processes, performance metrics begin to evolve	Integrated technology designed to enable emerging best practices, technology suppliers are partners in defining how technology accomplishes best results	Good quality results within expected tolerances most of the time; poorest individual performers improve towards best performers; more leverage achieved for best performers
2 – Managed Standardized tasks and roles, introduction of advanced technology begins	Individuals develop processes that work for them; not yet institutionalized across individuals or location.	Unintegrated point solutions designed for specific tasks and individuals spent much time figuring out how to integrate processes and technology to accomplish results	Variable quality with some predictability; best individual performers assigned to business critical projects to reduce risk and improve results
1 – Baseline Capable people and heroic efforts	No defined processes. Individual performers may follow a different process or pathway each time	General purpose tools: Excell, Access, or none at all. DM is a project function and not a corporate function	Organization depends entirely upon individuals; little or no corporate visibility into DM cost or performance; variable quality, low results predictability, little to no repeatability.

TIME, TECHNOLOGY, UNDERSTANDING & QUALITY

Value Determination Factors

Model Level	Value Determination Characteristics
5 Fully Optimized	Obvious value for services received; risk reduced, unnecessary costs avoided, clear best practices & sector leadership
4 Predictable Risk	Lower ROI in investments in DM are accepted in exchange for reduced risks
3 Corporate Competency	Measurable, able to recognize costs and benefits, perform cost/benefits analyses, maximize ROI, good results faster, better trained workforce
2 Managed	Anecdotal, based on individual performers' capabilities and specific memorable events
1 Baseline	Subjective, gut feel for performance, benefit, costs, and value received

Gains: Consistency, Repeatability, Cost & Business Model Awareness

Summary

- New challenges
- Stepwise Implementation of a Complete Solution is required
- Stay tuned